Cancer Epidemiology

Small grants are available from the National Cancer Institute for projects in cancer epidemiology with a primary focus on etiologic cancer research. These are short-term awards intended to provide support for pilot projects, testing of new techniques, or development of innovative or high-risk projects that could provide a basis for more extended research. The program is intended to encourage less-experienced investigators, investigators at institutions without well-developed research traditions and resources, and experienced investigators for exploratory studies that represent a significant change in their research direction.

Investigations may include the following: 1) planning a complex epidemiologic investigation; 2) developing or validating a laboratory or statistical procedure that has the potential for improving the quality of cancer epidemiologic research; 3) obtaining support to study a question relevant to cancer epidemiology in special situations, such as the availability of special personnel for limited time periods, rapidly evolving research, or limited access to an important resource; 4) analyzing previously collected data for epidemiologic purposes, such as combining data from several studies to examine consistency or strength of observed associations; 5) resolving methodologic problems, such as documenting the accuracy of a customary procedure in preparation for use in epidemiologic research, evaluating the effect of cancer diagnosis, and/or treatment of risk factor estimates derived from case–control studies; or 6) obtaining funding for investigations of urgent or emergent issues in cancer epidemiology.

Grants will not exceed $50,000 per year for two years. Application deadlines include 20 April 2001, 20 August 2001, and 20 December 2001. Additional information is available on the Internet at http://grants.nih.gov/grants/guide/pa-files/PA-01-021.html.

Contact: A. R. Patel, Division of Cancer Control, NCI, 6130 Executive Boulevard, Room 239C, MSC 7395, Bethesda, MD 20892-7395 USA, 301-496-9600, fax: 301-402-4279, e-mail: ap39f@nih.gov. Reference: PA No. PA-01-021

Fundamental Technologies for Development of Biomolecular Sensors

Based upon a shared vision of the future of human health care, the National Aeronautics and Space Administration (NASA) and the National Cancer Institute (NCI) are forming a partnership to jointly research and develop biomolecular sensors that will revolutionize the practice of medicine on earth and in space. Specifically, NASA and the NCI recognize mutual objectives in advancing the development of technologies and informatics tools to enable minimally invasive detection, diagnosis, and management of disease and injury through the support of fundamental technology development.

NASA and the NCI are specifically interested in supporting the development of new technologies to scan the body for the earliest signs of emerging disease and support immediate, specific intervention. The ability to scan the body for early signs requires that these technologies to be minimally invasive. To prevent the rapid expansion of disease and maximize the benefit of the earliest detection, future technologies should support a seamless interface between detection, diagnosis, and intervention. The detection, diagnosis, and intervention will be based on the capacity to measure, analyze, and manipulate molecular processes at an appropriate scale in the living body. Essential to the utility of these technologies is the development of information infrastructure and analysis tools that will link the information on basic discoveries, intervention discoveries, and clinical outcome information to specific patient histories to aid the caregiver in making rapid, informed decisions about appropriate intervention.

Specific areas for fundamental technology development targeted by this solicitation include 1) novel molecular recognition chemistries, materials, chemical composites, nanoparticles, nanostructures, agents, and devices suitable for *in vivo* use; 2) novel strategies for *in vivo* signal generation and amplification; 3) systems suitable for noninvasive, dynamic signal acquisition from deep tissues and systems of reduced scale suitable for manned space missions; 4) new tools for feature definition and extraction, including computational and mathematical approaches; and 5) new approaches and multifunctional technology platforms to create an interface between *in vivo* detection and targeted intervention, including nanostructures/devices and novel materials and composites.

It is anticipated that multiple awards will result from this announcement. The length of time for which funding is requested should be consistent with the nature and complexity of the proposed research. The maximum period acceptable for a research proposal is three years. Awards are expected to be made in or around December 2001. The average total annual cost (including both direct and indirect costs) for these contracts, cooperative agreements, and grants is predicted to be $500,000 per year per award.

Full details of this solicitation can be found on the Internet at http://rcb.nci.nih.gov/appl/rfp/17016/Table%20of%20Contents.htm#INSTRUCT. Applications are due 30 April 2001.

Contact: Richard L. Hartmann, Contracting Officer, Research Contracts and Acquisition Branch, NCI, Executive Plaza South, Room 603, 6120 Executive Boulevard, Rockville, MD 20852 USA, 301-496-8620, e-mail: rh75f@nih.gov. Reference: N01-CO-17016-32

Bioengineering Research Partnerships

Participating institutes and centers of the National Institutes of Health (NIH) invite applications for R01 awards to support bioengineering research partnerships (BRPs) for basic multidisciplinary research addressing important biological or medical research problems. A BRP is a multidisciplinary research team applying an integrative systems approach to develop knowledge and/or methods to prevent, detect, diagnose, or treat disease or to understand health and behavior. The partnership must include appropriate bioengineering expertise in combination with basic and/or clinical investigators. A BRP may propose discovery-driven, developmental, nonhypothesis-driven, design-directed, or hypothesis-driven research at universities, national laboratories, medical schools, large or small businesses, or other public and private entities.

One objective of this program announcement is to encourage research in selected basic bioengineering areas. Bioengineering integrates physical, engineering, and computational science principles for the study of biology, medicine, behavior, or health. It advances fundamental concepts, creates knowledge from the molecular level to the organ systems level, and develops innovative biologicals, materials, processes, implants, devices, and informatics approaches for the prevention, diagnosis, and treatment of disease, for patient rehabilitation, and for improving health.

A second objective is to encourage collaborations and partnerships among the scientific and biomedical disciplines. Each BRP should bring together the necessary basic science, engineering, and/or clinical expertise to focus on a significant area of bioengineering research within the mission of the NIH. In addition to the benefits to be derived from the research, the collaborations and partnerships can create opportunities for transdisciplinary communication and training for a new generation of scientists capable of interacting across traditional technical boundaries.

Applications for BRP awards should focus on an area of bioengineering research where progress is likely to make a significant contribution to improving human health. Areas of particular relevance include, but are not limited to, 1) behavioral science; 2) biomechanics; 3) clinical medicine, therapeutics, and drug delivery; 4) functional genomics, including microarray technology, integrated systems, and analytical tools; 5) nanotechnology and microtechnology; 6) medical implants, biomembranes, sensors, and devices; and 7) cell and tissue engineering and biomaterials.

Prospective applicants are asked to submit a letter of intent by 13 July 2001. The letter of intent is to be sent via email to BRP2@od.nih.gov. Final applications are due 14 August 2001. More information on this announcement is available on the Internet at http://grants.nih.gov/grants/guide/pa-files/PA-01-024.html.

Contact: Richard E. Swaja, Office of Extramural Research, 1 Center Drive, Room 152, Bethesda, MD 20892-0152 USA, 301-402-2725, fax: 301-496-0232, e-mail: swajad@od.nih.gov. Reference: PA No. PA-01-024

Small Grants in Occupational Safety and Health Research

In today's society, Americans are working more hours than ever before. The workplace environment profoundly affects human health; each one of us, simply by going to work each day, may face hazards that threaten our health and safety. Risking one's life or health should never be considered merely part of the job. In 1970, Congress passed the Occupational Safety and Health Act to ensure Americans the right to safe and healthful working conditions, yet workplace hazards continue to inflict a tremendous toll in both human and economic costs.

In 1996, the National Institute for Occupational Safety and Health (NIOSH) and its partners in the public and private sectors developed the National Occupational Research Agenda (NORA) to provide a framework to guide occupational safety and health research into the next decade, not only

for NIOSH, but also for all of the occupational safety and health community. This attempt to guide and coordinate research nationally is responsive to a broadly perceived need to address systematically those topics that are most pressing and most likely to yield gains to the worker and the nation.

Potential applicants may obtain a copy of the NORA by calling 1-800-356-4674 or visiting http://www.cdc.gov/niosh/nora.html. The agenda identifies 21 research priorities and reflects an attempt to consider both current and emerging needs. The priority areas are not ranked; each is considered to be of equal importance. The NORA priority research areas are grouped into three categories. They are: 1) *disease and injury*—allergic and irritant dermatitis, asthma and chronic obstructive pulmonary disease, fertility and pregnancy abnormalities, hearing loss, infectious diseases, low back disorders, musculoskeletal disorders of the upper extremities, and traumatic injuries; 2) *work environment and workforce*—emerging technologies, indoor environment, mixed exposures, organization of work, and special populations at risk; and 3) *research tools and approaches*—cancer research methods, control technology and personal protective equipment, exposure assessment methods, health services research, intervention effectiveness research, risk assessment methods, social and economic consequences of workplace illness and injury, and surveillance research methods.

This program announcement will use the small grant (R03) award mechanism to provide support for project periods of up to two years to carry out exploratory or pilot studies, to develop or test new techniques or methods, or to analyze data previously collected. Applicants should provide a statement about which NORA area is being addressed and a rationale for how the proposal is intended to contribute to the scientific knowledge base of the specified priority area. Awards will not exceed two modules ($50,000) per year in direct costs. Applications may be submitted by domestic, public, and private nonprofit and for-profit organizations, and by governments and their agencies.

Applications are to be submitted on the grant application form PHS 398 (rev. 4/98) and will be accepted at the following receipt dates: March 1, July 1, and November 1. Application materials are available at most institutional offices of sponsored research and from the Division of Extramural Outreach and Information Resources, National Institutes of Health, 6701 Rockledge Drive, MSC 7910, Bethesda, MD 20892-7910 USA, 301-435-0714, e-mail: grantsinfo@nih.gov. Application kits are also available at http://grants.nih.gov/grants/forms.htm. Additional information on this program announcement is available on the Internet at http://grants.nih.gov/grants/guide/pa-files/PA-01-033.html

Contact: Roy M. Fleming, Research Grants Program, NIOSH, 1600 Clifton Road NE, Building 1, Room 3053, MS D-30, Atlanta, GA 30333 USA, 404-639-3343, fax: 404-639-4616, e-mail: rfleming@cdc.gov. Reference: PA No. PA-01-033

Environmental Technologies

Proposals to develop technologies and methodologies to reduce environmental impacts from current and past Navy operations are invited by the Naval Facilities Engineering Service Center (NFESC). The NFESC is interested in technologies and methodologies that are new, innovative, or that advance the state of the art or increase knowledge of a technology or methodology.

The technology or methodology should address one of the following topic areas: 1) *environmental assessment, restoration, and cleanup*—services to assess or remediate existing pollution generated by military operations, including methodologies for evaluation of ecologic risk, risk reduction, or establishment of risk-based cleanup goals; 2) *conservation of natural resources*—practices that support habitat both on land and at sea for rare species, migratory birds, or marine mammals, thus complying with environmental legislation and ensuring protection of sensitive resources while supporting military operations; 3) *unexploded ordnance*—detection, de-energizing, disposal, or remediation of unexploded ordnance generated by military operations; 4) *pollution prevention*—process design changes, management practices, or methodologies to minimize the amount of pollution generated during present or future operations; or 5) *environmental compliance*—process design changes or management practices to comply with local, state, and federal environmental regulations.

Applicants are invited to submit proposal abstracts through the electronic form located at http://erb.nfesc.navy.mil/baa-form.htm. The deadline for submissions is 30 September 2001.

Contact: Paulette Peterson, 805-982-5081, e-mail: gbaa@nfesc.navy.mil. Reference: Sol. N47408-01-R-2205

Exploratory/Developmental Grants for Diagnostic Cancer Imaging

The Biomedical Imaging Program of the Division of Cancer Treatment and Diagnosis solicits exploratory/developmental (R21) grants that articulate highly innovative research concepts in diagnostic cancer imaging. Within each area of importance in imaging there exists a need for innovative and creative approaches leading to new avenues of research. One way to encourage research into high risk/high impact areas is to provide investigators with the initial resources required to accomplish feasibility and pilot testing of innovative ideas.

Research topics to be supported by the R21 mechanism will be those falling within broad areas of clear importance to the future of *in vivo* biomedical cancer imaging: 1) development of new and innovative imaging modalities and their optimization, characterization, preclinical, and clinical evaluation, with emphasis on their potential for cancer screening, diagnosis, or treatment; 2) development of new and innovative contrast or molecular/radiotracer agents for tumor visualization and interpretation for cancer diagnosis, staging, or treatment, or for understanding the physiologic states of organ systems and tumor systems; 3) development of new and innovative methods for image acquisition, display, transmission, computer-assisted analysis, teleradiology, and telemedicine applications that impact cancer screening, diagnosis, or treatment, or that improve cost effectiveness in the oncology setting; or 4) development of innovative methods for interventional radiology and techniques for improved image-guided diagnosis or treatment.

Applicants may request up to two years of support and up to $125,000 per annum in direct costs. Complete and detailed application instructions and information can be found on the Internet at http://grants.nih.gov/grants/guide/pa-files/PA-01-030.html.

Contact: Anne E. Menkens, Biomedical Imaging Program, National Cancer Institute, EPN 6068, 6130 Executive Boulevard, Bethesda, MD 20892 USA, 301-496-9531, fax: 301-480-5785, e-mail: am187k@nih.gov, Internet: http://www.nci.nih.gov/bip/. Reference: PA No. PA-01-030

Ethical, Legal, and Social Implications of Human Genetics and Genomic Research

This program announcement replaces the regular research grant (R01) component of PA-96-042, "The Ethical, Legal, and Social Implications of Genetics Research." This program announcement is designed to solicit research projects that anticipate, analyze, and address the ethical, legal, and social implications of the discovery of new genetic technologies and the availability and use of genetic information resulting from human genetics and genomic research. Of particular interest are studies that examine 1) the issues surrounding the completion of the human DNA sequence and the study of human genetic variation; 2) the issues raised by the integration of genetic technologies and information into health care and public health activities; 3) the issues raised by the integration of knowledge about genomics and gene–environment interactions into nonclinical settings; 4) the ways in which new genetic knowledge may interact with a variety of philosophical, theological, and ethical perspectives; and 5) how socioeconomic factors, gender, and concepts of race, ethnicity, and culture influence the use and interpretation of genetic information, the utilization of genetic services, and the development of policy.

This program announcement emphasizes the ongoing commitment of the National Institutes of Health to support research and educational activities related to these and other ethical, legal, and social implications of human genetics and genomic research. The ultimate mission of the research program is to support research and education activities that 1) promote genetic privacy and fair use of genetic information, 2) encourage the responsible integration of new genetic information and technologies into clinical and nonclinical settings, 3) ensure that genetic research is conducted in an ethical manner, and 4) improve public and professional understanding about genetics, genome technology, and related ethical, legal, and social issues. Also of interest are studies that examine conceptual education or literacy issues such as what constitutes genetic literacy and how various audiences learn genetic information.

Additional information is available on the Internet at http://grants.nih.gov/grants/guide/pa-files/PA-00-133.html.

Contact: The ELSI Research Program, National Human Genome Research Institute, Building 31, Room B2B07, 31 Center Drive, MSC 2033, Bethesda, MD 20892-2033 USA, 301-402-4997, fax: 301-402-1950, e-mail: elsi@nhgri.nih.gov. Reference: PA No. PA-00-133